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10/543,037	07/21/2005	Johannes Schweiger	4879/PCT	9187
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EXAMINER				
XAVIER, VALENTINA				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/543,037

**Applicant(s)**

SCHWEIGER, JOHANNES

**Examiner**

VALENTINA XAVIER

**Art Unit**

3644

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 36-50 is/are pending in the application.
- 4a) Of the above claim(s) 49 and 50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 36-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date 7/17/2008

### **DETAILED ACTION**

Examiner acknowledges the receipt of drawings filed on July 21, 2005. Examiner also acknowledges the foreign priority claim and the receipt of the certified copy of the priority document.

#### ***Election/Restrictions***

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 36 – 48, drawn to an aircraft wing construction.

Group II, claim(s) 49 and 50, drawn to a method of varying induced drag.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The apparatus of claims 36 – 48 could be used for other applications such as controlling other aspects of the flow other than induced drag.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and the product claims are subsequently found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder. All claims directed to a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further,

note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Newly submitted claims 49 and 50 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The apparatus of claims 36 – 48 could be used for other applications such as controlling other aspects of the flow other than induced drag.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 49 and 50 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Claim Objections***

Claims 36 – 48 are objected to because of the following informalities: Claims 36 – 48 claim “aircraft wing construction” in the preamble suggesting method steps of constructing an aircraft wing. However, the rest of the claim discloses structure of the wing. However, Examiner will assume that claims 36 – 48 are directed to an apparatus. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 36 – 48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 36 – 48 claim a “pivot axis” that is parallel to the elastic axis. The drawings show a “rotation axis” 4 that is parallel to the elastic axis. However, the pivoting point of 3a is shown as being perpendicular to elastic axis in Figs. 1 and 2. Examiner will assume that the pivot axis is perpendicular to the elastic axis as disclosed in Figs. 1 and 2.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 36 – 39, 43, and 45 – 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Klug (US 4,722,499).**

**With regard to claims 36, 37:**

Klug discloses

-an aircraft lifting wing (See Fig. 1) that is bounded by a leading edge, a trailing edge and a wingtip edge, and that is elastically deformable in a bending direction and in a torsional direction about an elastic axis (9) of said lifting wing extending in a span direction outwardly to said wingtip edge between said leading edge and said trailing edge;

-a control surface (4) that is pivotably connected to said lifting wing so as to be pivotable about a pivot axis (3) extending non-perpendicular to said elastic axis and non-parallel to said wingtip edge, wherein said control surface is located offset by a spacing distance in front of said elastic axis (See Fig. 1 where 4 extends in front of the elastic axis), and wherein a pivoting deflection of said control surface about said pivot axis is adapted to exert an aerodynamic force that elastically deforms said lifting wing in said bending direction and said torsional direction about said elastic axis and thereby varies an induced drag of said lifting wing during flight of said aircraft (inherent in most lifting wings); and

-a control and/or regulating arrangement (Col. 7; Lines 17 – 33) for the adjustment of the control surface.

Klug's control/ regulating arrangement is provided for the generation of an actuating signal for the control surface from data relating to the aircraft loading and the flight condition, with utilization of stored nominal value data (See Col. 7; Lines 17 to 33 and Col. 7; Lines 59 – 68). Furthermore, Klug's control arrangement (computer) is adapted to measure and store any signal received indicating deformation, and flight conditions.

As indicated above, Examiner shows that Klug discloses the same pivot axis as the Applicant (in Figs. 1 and 2). Therefore, Examiner assumes that the pivot axis is in fact perpendicular to the elastic axis.

**With regard to claims 38, 39:**

Klug's pivot axis is entirely in front of said elastic axis (See Fig. 1).

As mentioned above, Applicant fails to show a pivot axis that is parallel or non-intersecting with said elastic axis. Therefore, Examiner would like to compare Klug's design with that of the Applicant. Applicant shows a pivot axis that is perpendicular to the elastic axis – the same is shown in Fig. 1 of Klug.

**With regard to claim 43:**

Klug discloses the control surface extending only inwardly from and does not extend outwardly beyond a line (l') extending along said wingtip edge of said lifting wing, in all pivoting deflection positions of said control surface.

**With regard to claim 45:**

Generally, tapered wings with straight leading and trailing edges as the wing shown in Klug's invention can approximate to elliptical lift distribution.



**Claims 36, 40, and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Whitaker, Sr. (US 4,455,004).**

**With regard to claims 36 – 41:**

Whitaker, Sr. discloses an aircraft wing having an elastic axis (10\*) and a control surface (14) having a pivot axis (16) extending non perpendicular to the elastic axis and offset by a spacing distance in front of the elastic axis. Whitaker, Sr. also discloses a control arrangement (19 and 15) adapted to generate an actuating signal to the pivot axis.

Whitaker, Sr. also discloses the control surface as well as the pivot axis being entirely in front of the leading edge of the wing (See Fig. 1).

Whitaker, Sr. also shows that the pivot axis extends parallel to, on a line that is non-intersecting with said elastic axis and entirely in front of the elastic axis.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 42 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klug (US 4,722,499).**

Klug discloses the control surface extending only inwardly from and does not extend outwardly beyond a line (I') extending along said wingtip edge of said lifting wing, in all pivoting deflection positions of said control surface, but fails to disclose a control surface that is entirely in front of the leading edge. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the control surface located entirely in front of said leading edge in order to achieve desired aerodynamic results and more control.

### ***Response to Arguments***

Applicant's arguments filed 7/17/2008 have been fully considered but they are not persuasive. Applicant argues that the Klug reference does not disclose a pivot axis of the control surface that extends non-perpendicular to the elastic axis and non-parallel to the wingtip edge. However, Klug in fact does disclose a pivot axis that is non-perpendicular to the elastic axis. Applicant's drawings Fig. 1 and Fig. 2 shows a pivot axis that is parallel to the wingtip edge despite what is claimed. Therefore since Klug discloses the same design as Applicant's, this feature is moot.

Applicant argues that the pivot axis of the control surface extends parallel to the elastic axis in front of the elastic axis. Claims 36 – 48 claim a “pivot axis” that is parallel to the elastic axis. The drawings show a “rotation axis” 4 that is parallel to the elastic axis.

However, the pivoting point of 3a is shown as being perpendicular to elastic axis in Figs. 1 and 2. Examiner will assume that the pivot axis is perpendicular to the elastic axis as disclosed in Figs. 1 and 2. As indicated before, Examiner shows that Klug discloses the same pivot axis as the Applicant (in Figs. 1 and 2). Therefore, Examiner assumes that the pivot axis is in fact perpendicular to the elastic axis.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VALENTINA XAVIER whose telephone number is (571)272-9853. The examiner can normally be reached on Mon - Fri 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mansen can be reached on (571)272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael R Mansen/  
Supervisory Patent Examiner, Art Unit 3644

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